

**Request for Project Proposals
For
Homeland Defense Research and Development Effort**

Number: W15QKN-09-RPP-0004

Issued by:
Army Contracting Command
Joint Munitions and Lethality Contracting Center
Emerging Technologies Center
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Picatinny Arsenal, NJ 07806-5000

To the
SOSSEC, INC
43 Sandown Road
Danville, NH 03819

For the
System of Systems in Security Consortium

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Part I. Executive Summary

The Army Contracting Command, Joint Munitions and Lethality Contracting Center, Picatinny, New Jersey entered into a Section 845 Prototype Other Transaction Agreement (OTA) for the Homeland Defense effort with the System of Systems in Security Consortium through its agent SOSSEC, Inc. To date, the total estimated amount of the effort is \$5,000,000 for a period of one (1) year.

The U.S. Army desires to extend the Homeland Defense (HLD), Homeland Security (HLS), and Force Protection Enterprise to include its industry, academic and non-profit partners through the establishment of a single, U.S. only consortium. The Armaments Research, Development and Engineering Center (ARDEC), and Homeland Defense and Technologies Center (HDTC) has stated its desire to see U.S. industry, academia and other U.S. based entities establish a single consortium to function as the focal point for execution of HLD and HLS objectives under Section 845 Prototype OT. As a result, a single Consortium is emerging, System of Systems Security in Consortium. The System of Systems in Security Consortium is a Sponsor(s) – oriented non-incorporated enterprise, whose participants are from industry, academia, and Sponsor(s) formed under the membership agreement. Through the System of Systems in Security Consortium, the Government expects to increase advances accelerating the development and maturation of joint military and civilian capabilities, providing dual use (military and civilian) technologies; enhancing military and civilian training and preparedness; improving interagency information sharing; and fostering trusted relationships in compliance with the National Incident Management System (NIMS), all the while preparing to transition these technologies into potential programs of record.

The Homeland Defense OTA, number W15QKN-09-9-0004, was signed between the Government and the SOSSEC, Inc. (Consortium Administrative Organization or CAO) on 4 April 2009. The terms and conditions agreed to under this OTA will serve as the terms and conditions for future project agreements and modifications to the OTA. The USG anticipates multiple Firm Fixed Price and/or Cost Plus Fixed Fee project agreements under the Research Areas.

Only those members of the System of Systems in Technology Consortium who have executed (signed) the Consortium Member Agreement (CMA) prior to the proposal due date and are members in good standing will be eligible to have their submitted proposals evaluated. An offeror that submits a proposal prior to their signature of said CMA does so solely at his own risk. The USG accepts no responsibility for any costs associated with any proposal submission.

As described in Article I of the basic OTA, the Government will issue Requests for Project Proposals (RPPs) to the [CAO](#) as agent of the System of Systems in Security Consortium. The [CAO](#) will in turn, issue a similar request to the System of Systems in Security Consortium members (statement of objectives, etc.) including the evaluation factors upon which the Government will evaluate each request and select a proposal(s) for performance. The individual Consortium Members will then decide whether to

submit proposals in response to such calls and prepare their individual proposal(s) or will individually establish a team comprised of Consortium Members to prepare a team proposal(s). These Consortium Member proposals will be submitted to the CAO for review for completeness and format compliance under the RPP. The CAO will transmit the Consortium Member proposals to the Government. As part of this submission, the CAO will provide a summary of the project proposals submitted, inclusive of detailing significant participation of Nontraditional Defense Contractors (NDCs), and verify in the summary that all submitted project proposals are, in the aggregate, compliant with statutes for significant NDC participation. The Government shall be solely responsible for evaluation and selection of proposals for project funding from among the proposals submitted.

Projects will be selected for funding by the Government to the System of Systems in Security Consortium based on the merits of the proposals received in response to the Government announcement and the requirements for each project, as a best value assessment of all proposals. The estimated funding available for awards under this RPP is approximately \$5,000,000. [Multiple awards under multiple research areas are anticipated.](#)

Due to limited funding, the Government reserves the right to limit project agreements funded under any research area and only proposals considered to be of superior quality will be funded. The Government reserves the right to select for funding any, all, part, or none of the proposals received. Selection will be dependent upon the amount of Government funds received. The Government can refuse to fund project agreements or renegotiate proposals if on the aggregate there is not sufficient Nontraditional Defense Contractor participation or (in the alternative) cost sharing from a traditional contractor.

Project agreements will be funded under the basic Section 845 Other Transaction Agreement (W15QKN-09-9-0004). This instrument is not subject to the Federal Acquisition Regulations (FAR).

Classified material is not expected to be used on this effort.

There is no anticipated Government furnished property involved with the Request for Project Proposals and any resulting awards.

Part II. Research Areas

The principle purpose of the proposed OT is to attract new technologies and spur development of basic and advanced prototypes critical to near and long term HLD and HLS objectives issued by the U.S. Army and HLS and directly relevant to weapons and weapons systems.

This Request for Project Proposals is issued to solicit proposals for research and development of the following major research areas in homeland defense technologies: (i) Prototype Research and Development, (ii) Technology Development, Evaluation, and

Transition, (iii) Technology Integration, and (iv) Awareness and Demonstration. Each research area is defined below.

2.1 Prototype Research and Development

Perform specific research and prototype process development in Homeland Defense Technologies that include: HLD/HLS product evaluations, domain specific architecture product lines for emergency operations, Homeland Defense and Homeland Security training technique development at all levels, biometrics, target behavioral response, less than lethal mechanisms, Emergency Operation Center (EOC) stress at the federal, state and local level, human factors, and cultural and intangible aspects of interoperability (e.g. improving institutional relationships and better orchestrating human interaction at all levels).

Specific research areas in Prototype Research and Development include the following objectives:

2.1.1 Development of Knowledge and Portfolio Management Systems

Summary:	The Government seeks proposals establishing prototype information management systems through development, demonstration, and application of change management plans, techniques, and processes across organizations to achieve successful information sharing approaches. The solution approaches should support the early achievement of initial operational capability (IOC) to support an expanding user community.
Background:	ARDEC, its Engineering and Enterprise Centers, as well as Competency Directorates, manage a diverse portfolio of projects and technologies. Projects range from technology innovation, development, evaluation, and assessments through applications, prototype development, fielding and support across weapon and platform systems, software, training and logistics. Technologies include fire control, sensors, battlespace awareness, homeland defense/security, automated testing, optics, and networked lethality systems. Planning, execution, management, reporting and collaboration across this vast portfolio demands that technical, managerial and administrative personnel have ready access to a large variety and volume of information including but not limited to technical, programmatic and financial data, software libraries, presentations and reports, audio and video files, technical manuals and drawings. These data reside in multiple systems ranging from individual desktops and laptops through shared drives, networked storage systems and web sites. At the present time there is a need for applying a suite of enterprise-class tools to provide the

technical, management and administrative staff, and those of partner organizations, with ready and dependable access to needed information, and the ability to aggregate, share and apply it with maximum efficiency and effectiveness. Support is required to define, plan and execute the required Enterprise Portfolio Management Tool Suite (EPMTS).

Discussion: The Government seeks proposals that that will rapidly establish an operational Enterprise Portfolio Management Tool Suite (EPMTS) to meet the needs for a portfolio management information system supporting the rapid and efficient information identification, retrieval, visualization, aggregation, sharing and collaboration functions required to plan, execute, manage, collaborate and report on the programs and initiatives in the portfolio. The EPMTS should make maximum use of commercial off the shelf (COTS) technologies, including Web 2.0 technologies and provide a simple, intuitive Web-based human-machine interface. The infrastructure costs for EPMTS implementation and annual maintenance will be minimized by the use of widely used Web technologies and/or subscriber-based services. The solution approach should support the early achievement of initial operational capability (IOC) and be designed around a scalable, service oriented architecture facilitating spiral development and ease of evolution, expansion and refinement, with scalability to support an expanding user community, potentially extending across the ARDEC enterprise.

2.1.2 Joint Situational Awareness System (JSAS) Prototype Process Development

Summary: The Government is interested in receiving proposals demonstrating and institutionalizing improvements to human and organizational interoperability across multi-agency, multi-jurisdictional environments for responsible federal, state, and local organizations in the New York City Metropolitan Region to improve prevention and response execution. This prototype initiative will continue development and prototype implementation of the Joint Situational Awareness System (JSAS) for the Port Authority of New York and New Jersey (PANYNJ) infrastructure and the participating member agencies to include the States of New York and New Jersey, City of New York and the Metropolitan Transit Authority.

Background: The JSAS is a joint ARDEC and the PANYNJ program providing an information exchange, collaboration and communications capability that enables local, state and federal government entities to share information and coordinate incident management response during an emergency. The program's goals are to facilitate

interagency collaboration, speed joint decision-making, improve coordinated multi-agency response, and provide a testbed platform for a national architecture.

Discussion: ARDEC is interested in “human factors” research that supports the concept of building trusted relationships on a multi-jurisdictional, regional level. The intent is to provide a human factors assessment of attitudes towards change, leadership trust, and organizational culture across responsible military, federal, state, and local organizations. The proposals’ ultimate goal shall be to improve information sharing and foster interagency relationships before an event occurs – so that DOD and other follow-on response agencies can quickly and seamlessly integrate with lead civil authorities during times of crisis.

As part of ARDEC’s JSAS mission, ARDEC requires the development of technical and organizational tactics, techniques and procedures that effectively address human factors challenges to collaboration between and within responsible federal, state, and local organizations in the New York City Metropolitan Region.

2.1.3 Optical Detection System Development

Summary: The Government seeks proposals that develop and adapt optical design technologies to accomplish the Government’s HLD mission, extending critical protection to field responders, civil authorities, and the public. A primary interest is the research and development of optical detection systems focused on detecting the presence and location of a shooter prior to shots being fired.

Background: As part of ARDEC’s mission to protect the homeland, ARDEC provides total life cycle engineering & management for binoculars, spotting scopes, sights, and related optical and electro-optical devices. These disciplines have previously been applied to optical systems for the individual soldier, Mortars, Artillery, Armored Vehicles and Helicopters used by the Army, Marines and Special Forces. These same technologies are equally valuable to the needs of field responders and local protection forces; the transition of these technologies will advance the HLD mission.

Discussion: The Government seeks proposals that develop and adapt optical design technologies to accomplish the Government’s HLD mission, extending critical protection to field responders, civil authorities, and the public. The Government’s interest focuses on developing prototype optical detection systems that assist in detecting a sniper or shooter prior to a shot being fired. Current

challenges in developing optical detection systems include aspects of the following items:

- CCD (Charged Coupled Devices) and CMOS (Complementary metal–oxide–semiconductor) image sensors signal readout, processing, tuning, and characterization, and output, display design and system performance verification.
- Functional design, analysis, experiments, and engineering evaluation of optics, laser, electro-optics, microprocessors, control devices, image processors, stabilization devices, and infrared sensors.
- Ultra-low noise analog circuit blocks, analog and digital signal transmission and digital signal processing for new camera systems.
- Analysis and technical studies of systems developed.
- Methods of fabrication and manufacturing of systems or subsystems.

2.2 Technology Development, Evaluation, and Transition

Hasten the application of new Tactics, Techniques and Procedures (TTPs) and technologies in support of securing and defending the Homeland. With the Government, identify and aid the maturation of selected research technologies and licenses to third parties. Performance includes operations with verification and test facilities (ARDEC Testbed EOC, the HLD Technology Integration and Readiness Training Test Bed and other relevant test beds) to assess products for use in emerging operations.

Use of ARDEC's Testbeds will support the research and development of HLD/HLS products, which include:

- situational awareness / sensors,
- non-lethal systems,
- biometrics,
- logistics products
- rapid prototyping,
- the defeat of lethal mechanisms,
- concomitant training of medical and tactical personnel
- logistics / gaming
- modeling and simulation
- software
- interoperability framework

Specific research areas in Technology Development, Evaluation, and Transition include the following objectives:

2.2.1 Regional Emergency Operations Center (REOC) Implementation: Establishing Institutional Relationships & Technology Integration for Coordinated Emergency Monitoring & Response

Summary: Establish a prototype “Fusion Center” based on the control of transportation operations and assets in the central region of Pennsylvania. Integrate interested agencies into one control course through state-of-the-art monitoring and control devices, enabling positive surveillance command and control of transportation resources.

Background: The REOC program will be accomplished by integrating information sharing systems and applications for the U.S. Rt. 15 corridor in the central region of Pennsylvania. The corridor represents a typical important highway corridor in the U.S. with rural, small urban and major urban areas and runs from the New York border near Lawrenceville in northeast Pennsylvania to the Maryland border south of Gettysburg. The U.S. Rt. 15 corridor has a high volume of private and commercial traffic, a mix of rural and small urban areas, the major urban area of Harrisburg and, a number of critical facilities (major power plants, military facilities, pipelines, etc), educational facilities (colleges, universities), tourism destinations and regional economic centers. In times of crisis, the control corridor represents a main important asset to assist in the DOD in its support of civil authorities.

Discussion: The REOC program seeks to assist development of a pilot project leveraging existing Federal resources and technologies previously funded under ARDEC’s PNS initiative. The program will demonstrate to new Stakeholders, Champions and Private Sector partners the need to facilitate information sharing across multiple information domains that deal with transportation that include military and other government agencies (to include security and confidentiality across information domains). Examples of this include, but are not limited to, solutions to permit enhanced sharing/dissemination of Intelligence, Surveillance, and Reconnaissance (ISR) products within and across interagency information domains (ISR Dissemination).

The first phase of the proposed REOC program will investigate and document the issues and challenges in developing and implementing the systems and applications for the on-going sharing of real-time transportation system, traffic and incident information with the following agencies at the state, regional and local level, target agencies:

- Pennsylvania State Police;
- Pennsylvania Department of Transportation;
- Pennsylvania Emergency Management Agency;
- Pennsylvania Department of Environmental Protection;
- Office of Administration/Information Technology.

The investigation and documentation will incorporate existing information collection and sharing systems and planned and/or programmed information collection and/or sharing systems or applications. Specifically, the program will investigate and document the issues and challenges:

- for the on-going, real-time sharing of information with the local and/or regional Emergency Operations Centers, 911 Centers, Law Enforcement Dispatch Centers, Emergency Dispatch Centers and related agencies on the U.S. Rt. 15 corridor.
- for the use and functionality of existing information sharing platforms, systems and applications based on the information sharing needs, requirements and/or guidelines as defined in the Project National Shield and the Defense Support of Civil Authorities documentation.
- of developing and implementing the systems and applications for the on-going, real-time sharing of information and the security requirements, protocols, policies and procedures based on: 1) the respective agency's security requirements, protocols, policies and procedures; 2) the Pennsylvania Office of Information Technology's information sharing (video/data) security requirements, policies, protocols and procedures and 4) the related Project National Shield and the Defense Support of Civil Authorities documented information sharing security requirements, policies and protocols.

The second phase of the proposed REOC program will develop and provide a solutions matrix with associated documentation to address and resolve the issues and challenges in:

- implementing the institutional relationships, systems and applications for the on-going sharing of real-time transportation system, traffic and incident information within the target agencies;

- implementing institutional relationships, systems and applications with the local and/or regional Emergency Operations Centers, 911 Centers, Law Enforcement Dispatch Centers, Emergency Dispatch Centers and related agencies on the U.S. Rt. 15 corridor for on-going, real-time information sharing.
- employing existing information sharing platforms, systems and applications based on the information sharing needs, requirements and/or guidelines as defined in the Project National Shield and the Defense Support of Civil Authorities documentation.
- establishing a prototype facility to demonstrate findings and interface with Project National Shield.

The third phase of the proposed REOC program will investigate and document current local, regional and state education and training programs, activities, policies for the implementation of the National Incident Management System, related Unified Command systems and operations, emergency management, emergency response and recovery, multi-agency coordination and related activities. The program will also document potential education, training, simulation, and/or exercise options for a Regional Emergency Operations Center and develop a first round of products.

2.2.2 ARDEC Technology Testbed Emergency Operation Center Enhancement Program

Summary:	The Government seeks proposals that will evaluate, research, test, improve, demonstrate, and deploy additional technologies that enhance the mission areas of the ARDEC Technology Testbed Emergency Operation Center (Testbed EOC) facility.
Background:	Situated at Picatinny Arsenal in western New Jersey, the US Army Research Development Engineering Command (ARDEC) recently commissioned the Testbed EOC. Currently, the build out of technologies within the Testbed EOC established an initial operating capability (IOC) in preparation for its grand opening. Since ribbon-cutting in May 2008, there has been a significant increase in homeland defense technology initiatives throughout the country. This accelerated pace of technology development will magnify any technology gaps which currently exist within the Testbed EOC.

Discussion:

The operational goal of the ARDEC Testbed EOC Enhancement Program is to develop a prototype facility providing a state of the art setting to research and demonstrate a wide spectrum of technologies focused on Homeland Defense Technologies, Tactics, and Training.

ARDEC's Technology Testbed Emergency Operations Center (Testbed EOC) serves as a developmental battle lab, providing Warfighters and first responders with interoperable, "world class" decision-support technologies to meet America's 21st century security and civil support challenges. Designed as a fully functional command and control center, the Testbed EOC also provides training, exercise, and real-world operational support to Warfighters, and civil support responders as well as local, state, and federal civil authorities.

The Testbed EOC is a key element in ARDEC's Homeland Defense initiative, supporting partnerships with government, industry and academia. Serving as the focal point for DoD Homeland Security research missions, the facility provides a unique environment in which to maximize resource and information sharing, strengthens unity of effort, and builds trusted relationships. With a focus on developing dual-use (Civil/Military) technologies, the Testbed provides integration, prototyping, and testing and validation services to programs that support joint, interagency collaboration and communications efforts.

Specific Testbed EOC mission areas include:

- Providing a secure, multilevel environment for experimentation, exercise, training and actual incident response
- Improving Civil/Military leadership ability to share critical operational and intelligence information with joint and coalition forces, government agencies, and first responders
- Utilizing the Command Post of the Future (CPOF) in the EOC to demonstrate ARDEC's civil/military C2 interoperability initiatives and enhance C-IED sensor integration efforts with Army Battle Command Systems (ABCS). Provide ARDEC, PMs and other research centers a real world tool for interoperability of situational awareness systems in support of the Warfighter deployed in OIF, and OEF and civil support missions.
- Serving as a backup facility for Continuity of Operations (COOP) for crucial Defense and Interagency C2 functions

during an emergency when main command centers are overwhelmed or rendered inoperable

- Partnering with other DoD and Federal research centers to share information and resources with the goal of improving the interoperability of joint military and civilian C2 systems and decision-support applications

2.2.3 Communications Technologies Connecting Multi-Jurisdictional Agencies

Summary:	The Government is interested in proposals developing communications technologies to connect multi-jurisdictional agencies with robust, reliable, redundant and interoperable high-bandwidth communications.
Background:	The Armament Research Development and Engineering Center (ARDEC) at Picatinny, New Jersey is leading an effort combining and harmonizing a number of Homeland Defense and Homeland Security Programs involving government, academia and industry. Leading programs include the Project National Shield (PNS) initiative and the Joint Situational Awareness System (JSAS) program. Project PNS seeks to establish a network of regional communication and collaboration centers, fielded by the Department of Defense (DOD), that will provide technology to emergency responders for day-to-day use and establish a system for execution of the DOD Homeland Defense mission. The JSAS is a joint ARDEC and the PANYNJ program providing an information exchange, collaboration and communications capability that enables local, state and federal government entities to share information and coordinate incident management response during an emergency.
Discussion:	The Government seeks proposals permitting the rapid, real-time monitoring and exchange of vital information to speed collective decision-making and response across complex local operating environments, operational terminologies and technical capabilities. This infrastructure will support interoperability between existing and emerging military command and control systems and civil authority decision-support systems, providing essential tools and applications to decision makers for resource allocation and status tracking.

2.3 Technology Integration

Support the Government HLD vision of managing selected programs for the federal government (Congressional and Agency programs) and local municipalities by applying advanced system engineering principles, processes, planning, and management

techniques to evaluate these programs to determine their potential for integration within an industry standards-based interoperability framework. Development and validation of requirements and interface control documents, as well as program execution, will be conducted within a system-of-systems paradigm.

The category considers the effective integration of all elements (i.e. processes, organization, people, information, and technology) involved and the manner in which they evolve and combine to yield new capabilities. By evaluating multiple existing projects and systems, assist in the identification of regional security improvement areas and expand/replicate regional and national capabilities to accelerate realization of large-scale interoperable security capabilities. Support the promotion and display of developed technologies and programs.

Specific research areas in Technology Integration include the following objectives:

2.3.1 Project National Shield (PNS) Integration Center (IC)

Summary:	Provide a single source of state-of-the-art intelligence integration by providing data coordination and analysis capabilities for disaster “early warning” and recovery needs.
Background:	<p>The events of the Oklahoma City bombing and 911 are illustrations of our national vulnerability to the threats of terrorist attack directed against civilian populations and critical infrastructure. In a similar manner, our recent experiences in the aftermath of natural disasters such as hurricanes Katrina and Rita have indicated our need to adequately prepare for and recover from the devastation inflicted by the ravages of nature. Effective protection of our Homeland demands timely coordination of “sensing, warning and reacting” to events.</p> <p>The ARDEC Project National Shield (PNS) initiative requires the sharing of information and will rely on an evolving enterprise architecture approach with full recognition that early applications of the system are dependent on the effective interoperability of disparate communication systems. An enterprise architecture framework will provide the “translation” layer allowing true interoperability of existing systems. The key element of PNS is the integration of existing assets into a fully interoperable network with shared information and resources that are flexible enough to respond to any and all threats in a timely and coordinated manner.</p>
Discussion:	Well-timed coordination and collaboration among military, public safety organizations, state and federal agencies as well as key private sector organizations is essential to adequately protect our nation. The development and implementation of disparate

protection systems can only be mildly effective in select regions and against specific threats and natural disasters. A nationally integrated approach is needed to predict, sense, warn, control and mitigate the effects of both man-made and natural threats.

To accomplish such an important and ambitious program, a unique approach must be developed that mitigates both the technical and jurisdictional risks of the effort. Many of the elements of the ARDEC PNS initiative are either in development or implemented in varying stages of maturity. Numerous projects, more than twenty in the Northeast/Mid Atlantic region alone, have been defined to address various aspects of Homeland Defense/Security.

While many of the PNS programs provide valuable technologies, concepts, procedures and processes, an effective plan is needed to harness the potential of these diverse initiatives by integrating them into a regional and ultimately national system of systems. Without leveraging the power of this level of integration, most of these projects will fail to meet stakeholders' expectations and little lasting benefit may be achieved. There is high risk that decisions about resource allocation and operational planning, made within a narrow context, will lead to sub-optimal overall capabilities. When the broad range of threat scenarios is considered, each assuming its own set of operational and system relationships and interdependencies, these shortfalls can be mitigated.

Therefore, the PNS IC program seeks to provide the tools, resources, and intelligence to continually improve and upgrade both the national intelligence processing capability and maintain the state-of-the-art systems for instant deployment to meet any need in the field. The PNS IC objective should enable a seamless interface to the county, state, and federal agencies and serves as the coordination of command and control infrastructure without affecting local autonomy.

Specific goals of the PNS IC will be to develop a prototype project able to:

- develop, integrate, test and maintain state-of-the-art communication and data systems,
- identify, integrate and analyze multiple sources of intelligence and/or threat data,
- disseminate "early warning" sentinel events data,
- coordinate disaster recovery data needs,
- plan the evolution of an integrated system,
- investigate and test alternative architectural models.

- serve as a regional EOC.

The PNS IC will be responsive to the need of the entire spectrum of requirements of Homeland Security and Homeland Defense and will allow for identification, qualification and test leading to rapid deployment of state-of-the-art techniques for early warning, data fusion, “battlefield” assessment, response and recovery in support of any and all missions.

2.3.2 Wyoming Valley Integrated Command Operations Program (ICOP)

Summary: Design and implement an ICOP within the Wyoming Valley Region and surrounding counties of Pennsylvania. The system-of-systems framework that is established will integrate with parallel ARDEC Project National Shield (PNS) programs, guarding against man-made and natural hazards and responding to national threats.

Background: The Wyoming Valley area of Pennsylvania is faced with unique challenges in planning, recognizing, and responding to Public Safety threats. The lack of an interoperable Public Safety Communications infrastructure inhibits information and data collection as well as responses to critical incidents. A unique window of opportunity exists to transform a set of promising isolated projects into a set of integrated capabilities and rapidly establish an entirely new level of homeland defense and military force protection capabilities.

Discussion: The objective system design for Wyoming County will include the network for event receipt, event data collection, data transfer and rapid first response. It will promote sharing of vital data between county and national command and control agencies. The critical 9-1-1 and emergency operations center components at local government will be fully integrated and capable of exercising the various systems components in the processing of daily emergency traffic. The Wyoming Valley ICOP will, in turn, be connected through a Regional EOC located at Picatinny NJ., then to national incident control centers.

The ICOP is enabled via the establishment of a regional network providing information sharing pathways between Emergency Operations Centers (EOC) within northeast Pennsylvania. The system-of-systems framework is established through interconnection of this ICOP, via a central hub at ARDEC, with functionally equivalent systems in Southwest Pennsylvania and Northwest Ohio. The framework approach will involve a three-year effort that will define the specific requirements and resources

of the region, including long-term operating budgetary constraints; design the network architecture to meet those needs, including appropriate locations for regional hubs; plan the program implementation, both infrastructure and management; implement the program; and test and turn over the system to regional stakeholders. The methodology will entail initial confirmation of key regional stakeholders and close coordination throughout the area, initiating in Wyoming County.

The Wyoming Valley ICOP will contribute to the advancement and security of the region by providing near-instant linkages between response agencies at all levels of government, highly reliable communications during emergency or crisis conditions, physical and encryption security features that ensure protection of sensitive communications, and facilitated operations. The framework provides a system of command, control, and communications (C3) that will assist the region while maintaining local autonomy. Having the interoperability framework in place will enable the DoD, their representatives, and/or other governmental agencies to share applications and receive information, via voice, data and video, on critical incidents requiring governmental assistance, thus allowing responding governmental entities timely situational awareness.

Specific goals of the Wyoming Valley ICOP will be to:

- provide mission needs analysis, requirements gleaning and assessments including evaluation/inventory of existing communications infrastructure and data sources/interfaces;
- prototype the database & operations center incorporating requirements definition and design, implementation, installation, and integration;
- prototype the high speed network incorporating network requirements definition, design and implementation;
- provide an integration plan, operational processes, resource sharing and development.

2.3.3 Wyoming Valley Integrated Command Operations Program (ICOP) Regional Integrated Command Center (RICC)

Summary: Provide integrated regional communications that establish improved situational awareness, mitigate incidents and support proactive defensive operations between multiple layers of government. The RICC program completes and builds upon research and development efforts already initiated for the

Southwestern Pennsylvania Regional Counterterrorism Task Force (Region 13).

Background:

The Armament Research Development and Engineering Center (ARDEC) at Picatinny, New Jersey is leading an effort combining and harmonizing a number of Homeland Defense and Homeland Security Programs involving government, academia and industry. Project National Shield (PNS) is the result of the integrated programs. The PNS initiative seeks to establish a network of regional communication and collaboration centers, fielded by the Department of Defense (DOD), that will provide technology to emergency responders for day-to-day use and establish a system for execution of the DOD Homeland Defense mission. The development of enterprise architecture will link existing state and local systems with the DOD and other federal agencies.

A core aspect of PNS is the Integrated Command Operations Program (ICOP). The ICOP demonstrates that interoperable communications and the ability to quickly assess and mobilize assets, while establishing situational awareness, are essential aspects of mitigating incidents and conducting proactive homeland defense operations. The operations are more effective, more efficient, and safer when using tactical communications. The ICOP made vast strides over its first two years, providing solutions to overcome operational challenges and support tactical requirements.

The Regional Integrated Command Center (RICC) is one of the two major components of the ICOP, the other being the Integrated Emergency Operations Center (IEOC) located in Johnstown, PA. The RICC is a redundant, self-healing network designed to enhance communications and training, increase situational awareness and improve interoperability and coordination for the thirteen counties of the Southwest Pennsylvania Emergency Response Group (Region 13). The RICC network provides the connectivity between the IEOC and PEMA, as well as the Region 13 counties. The RICC seeks to meet the needs of both the DOD and the regional stakeholders. An extensive assessment of Region 13 determined the capabilities most required by the emergency managers. Based on this assessment, a successful prototype network (RICC) was deployed. The prototype network connected the Allegheny County Emergency Operations Center (EOC), the Cambria County EOC, the IEOC and the Pittsburgh International Airport. In August 2007, the prototype network's capabilities, which include an integrated Emergency Notification System (ENS), were tested and demonstrated to ARDEC and Region 13 Stakeholders. In September 2007, "Operation Steel Hammer"

successfully demonstrated the RICC network's ability to serve as both a regional and inoperable network that allows disparate levels of government to communicate seamlessly.

Discussion:

The project element linking federal, state, and local resources is the ICOP, comprised of the IEOC and the RICC. The ICOP will enhance 9-1-1 dispatch, tactical communications, and EOC functionality throughout a designated region, providing the ability to quickly assess and mobilize assets, while establishing situational awareness, identifying mitigating factors and conducting proactive defensive operations. These developed elements of the project require refinement. The initiative, serving as the guide for disaster communications and interoperability, will field an operational network of regional communication and collaboration centers across the nation for various levels of government.

Continued RICC development will allow the IEOC to maintain its operational capability and further develop the DOD/local operational concepts, procedures and techniques, with continued demonstration of DOD C4ISR technologies. Further enhancement of the regional concept, with expanded operations that include data fusion and analysis, interoperability and the capability to communicate are all aspects of phase III.

Moreover, the RICC network will incorporate the remaining counties of Region 13. ARDEC will be able to build on the successes achieved to-date and deliver the capabilities of the RICC Network to all thirteen counties of Region 13. Consequently, the DOD will maintain the ability to develop further operational testing capabilities for tactical communications in support of the Homeland Defense mission.

Specific goals of the RICC will include to:

- amend Mission needs analysis with emerging expectations and objectives, systems requirements, interfaces, connectivity, capacity, and interoperability;
- update the wireless analysis report to communicate and to outline the advantages, disadvantages or any limitations associated with the deployment of a solution for a wireless network transport facility, to include network options, infrastructure, transport, connectivity, redundancy, reliability, and flexibility for expansion;
- augment the hardware, software and networking components to include additional EOCs and Call Centers to extend the

- RICC Network to the remaining six counties of Region 13 as required to complete the original proof of concept ;
- continue to bolster the Integration plan and Interoperability roadmap based on the lessons learned from the overall Phase II effort;
- provide a demonstration of the complete Region 13 RICC network to show the ability to maintain the redundancy and self-healing nature of the network.

2.3 Awareness and Demonstration

Conduct periodic demonstrations of prototype technologies for the HLD/HLS initiative. Provide a showcase for the progression of individually funded programs, demonstration of new/innovative techniques, tactics, and procedures (TTPs) and technologies, and validation of system-of-system engineering principles. The Demonstrations are used to raise awareness throughout the HLD/HLS communities. The HLD Technology Integration and Readiness Training Testbed and Testbed EOC provide the benefit of a “showcase” site for the exercise of new and emerging technologies as well as providing a venue for vetting new TTPs.

Part III. Proposal Submission

3.1. Proposal Content Instructions- General Information

If the offer is based on multiple team members, the SOW document shall include a summary section that states the portion of the effort that each team member will be conducting and a schedule indicating when each team member will participate in the SOW effort.

For this Request for Project Proposals, offerors may submit proposals for projects up to 24 months in duration, provided they specify clearly defined one year (or less), sequential (non-overlapping) project phases to allow for go/no-go decisions on future year efforts/funding. Each phase should specify key tasks (activities) and deliverables (results). The total length/duration of the technical effort is expected to vary by project complexity. The offeror may also provide for an additional 2 months for processing/completion of the final report.

Please be advised that if you take exception to any of the data rights provisions in Article XI: Data Rights of Other Transaction Agreement W15QKN-09-9-0004, for a particular project, you must specifically identify your data rights terms and conditions in that project proposal. This will require negotiations among the parties.

All proposals shall include either fixed price or cost type payable milestones.

3.2 Detailed Proposal Preparation Instructions

3.2.1 Technical (See Attachment I for Statement of Work template)- Statement of Work (Not to Exceed Fifteen (15) Pages)

- 3.2.1.1 Purpose
 - "The purpose of this project is to"
 - This should be a *short, broad general statement* of what you are to do. (Be specific in the Objectives subparagraph.)
 - This subparagraph is where the proposal explains the value of the effort to the warfighter
 - Show the connection between the technology and the benefit to the DoD, often this is best accomplished by describing what military tasks are enabled by the utilization of the technology and how performing that task with the new technology is an improvement over how the task is performed today by DoD.
- 3.2.1.2 Background
 - This subparagraph should present a *concise* but complete history of the problem or whatever generated the task you are undertaking.
- 3.2.1.3 Scope (How Much)
 - This subparagraph should define in concise terms exactly how much you are going to develop, test, demonstrate, or do. The main purpose of this paragraph is to define, limit or bound the project. It is not intended to explain the concept of how you are going to accomplish the task; that will be accomplished later in the proposal. Sometimes it is equally important to define here what you are NOT going to do.
- 3.2.1.4 Goals
 - This subparagraph should convey in concise terms the outcome of the overall effort and show clear linkage to project purpose
- 3.2.1.5 Objectives (What)
 - This subparagraph should clearly state in specific, measurable terms each task you intend to accomplish to demonstrate goal was achieved
- 3.2.1.6 Technical Solution
 - Describe the proposed technology advancement and the attributes that lead to the desired maturity/readiness level
- 3.2.1.7 Deliverables

- Describe the tangible items will result from conduct of this effort that will be provided to the DoD, and indicate delivery date
- 3.2.1.8 Methodology
 - Describe what activities will occur in developing the technology (analysis, software coding, hardware integration, hardware/software integration, testing, etc.)
- 3.2.1.9 Schedule of Events
 - Depict tasks with start and finish dates that must be completed to achieve each objective and prepare deliverables
 - A major milestone type (Gantt type chart) schedule may be included or a more detailed schedule may be included in the proposal
- 3.2.1.10 Integrated Baseline
 - Indicate the funding estimated to complete each task identified within the projected schedule
 - The Integrated baseline provides a depiction of the significant tasks that must be conducted to complete the project, how long each of the tasks will take to complete, the timing of the tasks relative to each other, and the estimated required cost for completion of each task. The Integrated baseline should provide a projection of expected work to be performed and associated cost at any point in time along the schedule. This will be used to track project performance against budget and schedule.
- 3.2.1.11 Roles and Responsibilities
 - Identify Key personnel, organizations, and roles associated with the project.
 - Explain the roles of the major organizational elements involved in the project. It is important to recognize all stakeholders in the event and their role, even if it is a passive role (such as funding the event).
 - Responsibility for providing personnel, equipment, facilities, or for specific functions to be performed should be described here.
- 3.2.1.12 Risk Management
 - Describe the risks associated with the project and the proposed means to mitigate those risks.
 - Describe risk in terms of high, medium, low risk of an event occurring that results in a high, medium, or low consequence as appropriate.
 - Indicate actions that can be taken to prevent the events from occurring, or actions that can be taken to “get well” if the event occurs.

3.2.2 Significant Participation of Nontraditional Defense Contractors or Cost Share (Not to Exceed 1 Page)

3.2.2.1 Significant participation can be defined as a meaningful portion of work performed by a Nontraditional Defense Contractor (NDC) that without the NDC's participation, the efforts being performed under a project award would either not be possible or produce results of a less successful nature. Forms of significant participation can be supplying new key technology or product(s), accomplishing a significant amount of the project effort, and causing a material reduction in cost or schedule or increase in performance.

3.2.2.2 Cost Sharing is not required under this Other Transaction Agreement if there is significant Nontraditional Defense Contractor participation in the aggregate. Where both Parties agree, cost sharing may be considered on a per project basis under terms and conditions to be agreed to by the Parties.

3.2.3 Past Performance (Not to Exceed 1 Page)

Offerors shall submit a list of all projects performed during the past three (3) years, which are relevant to the efforts required by this RPP. Relevant efforts are defined as meeting milestone schedules, meeting budgets, satisfying technical requirements, providing technical solutions, and technical complexity, performance and quality.

3.2.4 Personnel Qualifications (Not to Exceed 1 Page, excluding resumes)

The offeror shall submit resumes of key personnel involved with the management, technical oversight, and contracting/business operations, and their requisite qualifications, and roles and responsibilities, associated with the requirements of the solicitation. The offeror shall demonstrate appropriate experience and expertise to achieve the requirements. Inclusion of resumes for all personnel (not to exceed 3 pages each). For staff not yet identified, include specific qualification(s) these individuals would be expected to possess.

3.2.5 Organizational Experience (Not to Exceed 1 Page)

The offeror shall submit narrative addressing the currency, quality and depth of technical, academic and professional experience/qualification of individual personnel in working on similar projects; expertise of the Project Manager in directing projects of comparable technical and management complexity; degree of comparability of past projects related to the current project, including number of projects, complexity, workload and dollar amount. Supporting subcontractors, consultants and partners will be considered.

3.2.6 Cost/Price

Cost proposals shall include, at a minimum, the following:

- **Direct Material:** Provide the following detail on direct materials in excess of \$5000.00: description, quantity needed, unit cost, proposed vendors and basis for cost. For subcontracts in excess of \$25,000, the estimated subcontract cost elements and proposed vendors must be detailed in an exhibit. Same detail is required for Interdivisional Transfers as is needed on a direct purchase or subcontract.

- **Direct Labor:** Provide hours and dollars by job class or category and specify if rates are federally approved. If not federally approved, provide detail of method used for computing average or standard hourly rates.
- **Indirect Costs:** Attach copy of government approval of indirect cost rates. If government approved rates are not proposed, provide the following items to justify each rate: organization charts; indirect costs, by account (pool), for each proposed rate; distribution base used for each proposed rate; actual incurred rates for the prior three years, including actual base and pool amounts.
- **Project Related Travel:** Explain nature of any proposed travel costs; estimated number of trips required; destinations; mode and cost of transportation; and number of man-days per trip.
- **Consultants:** Justify the specific technical need for a consultant. Provide a vitae of academic and experience qualifications. Detail number of days required and the rate/day. Document where/when consultant has received proposed rate in performing similar services for others.
- **Other Direct Costs:** Justify estimated other direct costs by detail including: item description; quantity; cost per unit; description of intended use/purpose; vendor; basis for vendor selection, etc.
- **General & Administrative Costs:** Provide only approved government G&A rates on this line. Attach copy of government rate approval to this proposal. If no government approved rates exist, provide a list of all related costs.
- **CAS 414:** Provide approved CAS 414 rates, if applicable
- **Royalties or License Fees:** If a royalty/license fee is being paid to a third party that it is necessary and is allocated to this project, detail the royalty/license fee cost and basis for allocation. If the participant's own technology/intellectual property is being valued and proposed as cost sharing/in-kind, provide complete detail on the valuation methodology. All proprietary/intellectual property costs and its valuation methodology will be scrutinized and approved prior to inclusion as cost share in the final project/contract price.
- **Fixed Fee/Profit:**
- **CASH into Project:** Provide detail on any proposed cash contribution being made for use on the Project.
- **In-Kind Contributions:** Provide detail on any proposed in-kind contributions being made for use on this project.

3.2.7 Proposed Cost Sharing

Should cost share be proposed, the offeror shall explain the sources of cash and amounts to be used for cost sharing requirements and the specific in-kind contributions proposed, their value in monetary terms, and the methods by which their values were derived. This section should also describe how the proposed cost share is applicable to the proposed Statement of Work. See Other Transaction Guide dated January 2001 for definitions.

Part IV: Evaluation Factors for Award

The Basis for Selection for proposals submitted in response to a category area objective (as described in the Annual Plan) will be an integrated assessment of the results of a technical benefit evaluation of the proposal and a cost evaluation. The selection will be based upon the following two evaluation factors:

Technical Benefit
Cost Reasonableness

Technical benefit is more important than Cost. The Technical Benefit Merit Rating will be a subjective adjectival rating and cost will be a narrative rating. If applicable, the Government will weigh any increase in the Technical Benefit Merit Rating against any additional cost to determine if the parity of the relationship warrants the paying of additional cost for higher Merit Ratings.

Technical Benefit Evaluation Sub Factors

The overall Technical Benefit Merit Rating will be based on an integrated assessment of the below Technical Benefit Evaluation Sub Factors. Each Technical Benefit Evaluation Sub Factor will receive an adjectival rating of Excellent, Good, Fair and Poor. Based on these adjectival ratings, an overall Technical Benefit Factor Rating will be determined using an adjectival rating as follows: Excellent +/-, Good +/-, Fair +/- and Poor +/- . The Technical Benefit Evaluation Sub Factors are listed in decreasing order of importance.

1. Ability to address a specific technology gap objective area.
2. Comprehensiveness of schedule and plans.
3. Personnel, facility and resource plans.
4. Non-traditional Defense Contractor Involvement.

Technical Benefit Sub Factor 1. Ability to address a specific category objective area.

The ability to address a specific category objective as defined within the Annual Plan is the most important technical sub factor.

Ratings will be based on the proposed technical benefit to United States Government, Industry or Academia, the validity of the proposed technical solution, proposed technology transfer overview and potential applications of this technology.

Higher Ratings will be given to proposed technology that exhibits extraordinary potential to address a specific category objective as defined within the Annual Plan with a technological breakthrough solution that is an innovative, novel approach, which is a brand new technology that is currently not readily available. The following adjectival merit ratings will be used:

Evaluation	Merit Rating
Excellent understanding of the objectives and approach and has a high	Excellent

probability of achieving all or most of the requirements of the objective and a sound plan for implementation of the proposed technology	
Proposal demonstrates good understanding of the objectives and approach and has a good probability of achieving most of the requirements of the objective	Good
Proposal demonstrates an acceptable understanding of the objectives and approach and has a fair probability of achieving some of the requirements of the objective	Fair
Proposal demonstrates shallow understanding of objectives and approach that has little probability of achieving the objective	Poor

Technical Benefit Sub Factor 2: Comprehensiveness of schedule and plans.

The proposed approach used to explore the prototype homeland defense technology areas outlined in the Annual Plan, will be evaluated on the soundness and completeness of all methods, techniques, procedures, studies, modeling, simulations, and testing to fully describe the proposed solution. The proposed effort will be assessed on the overall schedule for management of milestones to include prototype objective deliverables, distribution of man hours, and timely performance. The following adjectival merit rating will be used:

Evaluation	Merit Rating
Proposal demonstrates a comprehensive schedule and management plan that is necessary to complete milestones and objectives in a timely manner	Excellent
Proposal demonstrates a good schedule and management plan that is necessary to complete milestones and objectives in a timely manner	Good
Proposal demonstrates an acceptable schedule and management plan that is necessary to complete milestones and objectives in a timely manner	Fair
Proposal demonstrates an unrealistic schedule and inadequate management plan that is necessary to complete milestones and objectives in a timely manner	Poor

Technical Benefit Sub Factor 3: Personnel, facility, and resource strength.

Ratings will be based on the description of the Offeror(s) capabilities, experience, facilities, techniques and equipment that will be used to perform the task and how each will be used to support the effort. Ratings will be based on the Offeror(s) personnel and facilities available for this effort and relevant to the effort proposed. Capabilities, experience, facilities, techniques and equipment that are irrelevant to the current effort will not be considered in the rating. Rating of personnel capabilities will be based on a summary of the relevant experience and qualifications of personnel proposed for the effort. The following merit ratings will be used:

Evaluation	Merit Rating
Proposal offers excellent, highly qualified, relevant personnel and resources.	Excellent

Proposal offers qualified, relevant personnel and resources	Good
Proposal offers acceptable personnel and resources	Fair
Proposal offers limited or unqualified personnel and resources	Poor

Technical Benefit Sub Factor 4: Non-traditional Defense Contractor Involvement

Ratings will be based on the degree of participation and contribution of non-traditional defense contractors that will be used to perform the task or support the effort. The following adjectival merit rating will be used:

Evaluation	Merit Rating
Proposal demonstrates clear non-traditional defense contractor participation that will lead project execution and provide a significant contribution to the proposed prototype project	Excellent
Proposal offers a high level of non-traditional defense contractor participation that is a significant contribution to the proposed prototype project	Good
Proposal offers some non-traditional defense contractor participation that may be a significant contribution to the proposed prototype project	Fair
Proposal offers no non-traditional defense contractor participation	Poor

Technical Benefit Factor Rating

The overall Technical Benefit rating reflects the government's confidence in each Offeror's ability, as demonstrated in its proposal, to meet the stated objective. This evaluative rating shall be conducted at the factor level during the Government's evaluation. The ratings shall be supported by narrative justification. The ratings to be used by the Government are listed below. A proposal need not have all of the characteristics of a given rating in order to achieve that overall characterization.

Excellent – Through a very convincing demonstration that category objectives (as described in the Annual Plan) are met, the Offeror displays the highest levels of innovation, technical competence, and managerial ability. Significant cost share is being offered, and/or there is a high level of non-traditional defense contractor participation. The proposal fully and completely meets the expectations of; and sets forth plans, approaches and analyses that show a high probability of meeting program goals. Overall, the proposal has exceptional strengths that will significantly benefit the Government.

Good – Analyses, approaches, and planning considerations demonstrate that the Offeror is able to interpret requirements and project them into plans/analyses, etc., in a clear, concise manner. One or more strengths indicate a proposed approach that will benefit the Government. Cost share is proposed, and/or there is participation of non-traditional defense contractors. Overall, the proposal has multiple strengths that will significantly benefit the Government.

Fair – Plans, approaches, studies, etc., are provided to the extent requested, and the key or pivotal points raised by the applicable factors have been satisfactorily covered in the proposal. The Offeror has presented an orderly plan to meet the stated requirements, but the proposal does not necessarily demonstrate any exceptional features, innovations, analyses or originality. The technical analyses satisfactorily meet requirements and are technically correct. Limited cost share and/or limited participation of non-traditional defense contractors is proposed. Overall, the proposal offers an acceptable solution with limited strengths.

Poor – Poor proposals contain one or more substantial, critical flaws. Proposals have very few strengths and exhibit significant omissions and/or many weaknesses that are not offset by the strengths.

Cost/Price Evaluation for all Research Areas:

Price evaluation will focus on the appropriateness and the relevance of the proposed labor, material, travel and other direct costs in relation to the offeror's approach and will be used as a negotiation point as opposed to a critical decision factor.

The offeror's proposed costs and fee/profit will be evaluated for magnitude and realism with appropriate consideration of support costs. Cost will be evaluated, using cost realism, to determine the probable cost to the Government. Cost realism will determine what the Government should realistically expect to pay for the proposed effort, the offeror's understanding of the work, and the offeror's ability to perform the efforts under the project agreement. The evaluation will include price or cost analysis of all costs and fee/profit proposed, together with all supporting cost information/data. Further adjustment will be made to the offeror's price as deemed necessary by the Agreements Officer, to include but not limited to, such items as securing data rights and use of Government Furnished Material or Property. The adjusted cost represents the most probable cost to the Government at completion.

Part V: Basis for Award

Multiple awards are intended to be made based on the best overall proposals that represent the best value to the Government, with appropriate consideration given to the following evaluation factors: Technical, Cost/Price. Project Proposals not initially awarded will be placed in an electronic "basket" file for a period of three (3) years. It is the intent of the Government to select the highest ranked proposals; however, as Government customer funding is received, the Government reserves the right to select the submitted proposal(s) that best match the customer's requirements, and may be awarded, out of order and out of cycle. Not all Proposals deemed selectable will be funded. Decisions to fund will be based on funds available. Project Proposals may be considered, for funding, for a period of up to 3 years from the closing date for submission of proposals. At the sole discretion of the Government, additional Requests for Project Proposals may be issued outside the annual cycle delineated in the OTA. These additional requests will be confined to specific technology objectives not listed in the

current Request and in direct response to exigent Government technology gaps that are subsequently identified.

For the purposes of the proposal selection, all proposals will be ranked as follows:

- (1) Most highly rated proposals that are most important to ARDEC's Homeland Defense program suitable for immediate funding
- (2) Highly rated proposals that are important to ARDEC's Homeland Defense program but are not suitable for immediate funding. These proposals will remain viable for award until such time that they expire.
- (3) Proposals not suitable for award due to low evaluation ratings and/or lack of

ATTACHMENT I- RPP Process Chart

